

**Appl. No. : 10/769,605**  
**Filed : January 30, 2004**

## **REMARKS**

Reconsideration and allowance of this application, as amended, is respectfully requested. Claims 1-20 were pending in this application prior to entry of the above-mentioned amendments. Claims 2, 3, 8, 14 and 17-19 are herein canceled. New Claims 21-37 have been added. Claims 1, 4, 7, 9-13, 15 and 16 have been amended. No new matter is added by these amendments. Accordingly, Claims 1, 4-7, 9-13, 15, 16, and 20-37 are now pending.

Applicants submit that this application, as amended, is in condition for allowance and such action is earnestly requested. Each of the Examiner's reasons for rejection is addressed below.

### **Restriction requirement**

The Examiner has required restriction of prosecution to one of the following groups of claims:

- Group I      Claims 1-7, 9-13 and 15-20, drawn to a method, classified in class 205, subclass 104.
- Group II      Claims 8 and 14, drawn to an apparatus, classified in class 428, subclass 620.

In response (and confirmation of the telephone conversation between Tina Chen and the Examiner on October 30, 2005), Applicants elect, without traverse, to proceed with examination on the merits of Group I (Claims 1-7, 9-13 and 15-20). Accordingly, Claims 8 and 14 are herein canceled.

### **Amendments to the claims**

Claims 1, 7 and 13 have been amended to clarify the invention. Claim 1, as amended, recites, *inter alia*, "treating a surface of the first conductive layer by applying a first anodic current waveform" and "treating a surface of the second conductive layer by applying a second anodic current waveform, wherein the second anodic current waveform has a longer duration than the first anodic current waveform." Claim 9, as amended, recites, *inter alia*, "applying a first anodic current waveform to treat the first conductive layer, the first anodic current waveform comprising at least one anodic current pulse" and "applying a second anodic current waveform to treat the second conductive layer, the second anodic current waveform comprising at least one

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anodic current pulse, wherein the second anodic current waveform has a longer duration than the first anodic current waveform.” Claim 15, as amended, recites, *inter alia*, “applying a first cathodic current waveform to form a first conductive layer on the wafer surface, the first conductive layer having a planar portion over a first cavity and a non-planar portion over a second cavity, the first cavity being filled and the second cavity being unfilled; treating the first conductive layer by applying a first anodic current waveform; applying a second cathodic current waveform to form a second conductive layer on the first conductive layer, the second conductive layer having a planar portion over the first and second cavities cavity; and treating the second conductive layer by applying a second anodic current waveform, wherein the second cathodic current waveform has a longer duration than the first cathodic current waveform and the second anodic current waveform has a longer duration than the first anodic current waveform.” No new matter is added by any of these amendments. Support for these amendments can be found in the application as originally filed (“the Application”), U.S. Patent Publication No. 2004/0265562, at, for example, paragraphs [0022]-[0024] and Fig. 4 of the Specification. For example, with reference to Fig. 4 of the application, anodic pulsed waveform 208 has a longer duration than anodic pulsed waveform 204, and cathodic waveform 206 has a longer duration than cathodic waveform 202.

Claims 4, 7, 10-13 and 16 have been amended to correct typographical errors, to clarify the language, and/or to match follow-on recitations with their antecedents in Claims 1, 9 and 15.

New Claims 21-37 have been added. The new claims are fully supported by the Application at, for example, paragraphs [0021]-[0027] of the Specification.

### **Section 102 rejections**

Claims 1, 2, 4, 5, 7, 9, 10, 15-18 and 20 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent no. 6,432,821 to Dubin et al. (“Dubin ’821”) as evidenced by U.S. Patent Publication No. 2002/0061715 to Uzoh et al. (“Uzoh”). Applicants submit that Claims 1, 9 and 15, as amended, are allowable over Dubin ’821.

Amended Claims 1 and 9 are allowable over Dubin ’821 because Dubin ’821 (with or without the teachings of Uzoh) does not teach or disclose a second anodic current waveform having a longer duration than the first anodic current waveform. Amended Claim 15 is allowable over Dubin ’821 because Dubin ’821 does not teach or disclose a second cathodic current

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waveform having a longer duration than a first cathodic current waveform and a second anodic current waveform having a longer duration than a first anodic current waveform. Accordingly, Applicants respectfully request that the §102(e) rejections of Claims 1, 9 and 15 be withdrawn.

Claims 4, 5, 7, 10, 16 and 20 recite additional features of advantage and utility. Moreover, these claims are allowable because they depend from and therefore include all of the limitations of Claims 1, 9 and 15. Dubin '821 does not teach all of the limitations of independent Claims 1, 9 and 15, let alone the unique combinations of limitations of Claims 4, 5, 7, 10, 16 and 20. Accordingly, Applicants respectfully request that the §102(e) rejections of Claims 4, 5, 7, 10, 16 and 20 also be withdrawn.

Applicants submit that the rejections of Claims 2, 17 and 18 are moot in view of the cancellation of these claims.

### **Section 103 rejections**

Claims 3, 6, 11-13 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dubin '821 evidenced by Uzoh as applied to Claims 1, 9 and 15, and further in view of U.S. Patent No. 5,972,192 to Dubin et al. ("Dubin '192"). Applicants submit that, in view of the asserted allowability of Claims 1, 9 and 15, as discussed above, Claims 3, 6, 11-13 and 19 are allowable.

Claims 6 and 11-13 depend from and therefore include all of the limitations of Claims 1, 9 and 15. Moreover, these claims are allowable because they recite additional features of particular advantage and utility. The combination of Dubin '821 (as evidenced by Uzoh) and Dubin '192 does not teach or suggest all of the limitations of independent Claims 1, 9 and 15, let alone the unique combinations of limitations of Claims 6 and 11-13. Accordingly, Applicants respectfully request that the §103(a) rejections of Claims 6 and 11-13 be withdrawn.

Applicants submit that the rejections of Claims 3 and 19 are moot in view of the cancellation of these claims.

### **New Claims**

New Claims 21-37 depend from and therefore include all of the limitations of independent Claims 1, 9 and 15. Moreover, these claims recite additional features of particular advantage and utility. Consequently, Applicants submit that new Claims 21-37 are allowable.

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### CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance and request the same. If there is any further hindrance to allowance of the pending claims, the Examiner is invited to contact the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: Adeel Syed Akhtar  
Adeel S. Akhtar  
Registration No. 41,394  
Attorney of Record  
Customer No. 20,995  
(415) 954-4114

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